

ABSTRACT

A graftless prosthetic stent for treatment of vascular lesions such as aneurysms and arterio-venous fistulas, especially in neurovascular vessels, comprises a continuous helical ribbon formed of a shape-retaining metal having a transition temperature at which the stent expands from its contracted condition to a radially expanded condition, the stent remaining substantially cylindrical in its contracted and expanded conditions. The helical windings have variable width, thickness, number or size of openings, or combinations of these features, which affect the stiffness, rate of expansion at the transition temperature, and the area of vessel wall covered by the stent. A catheter device which includes the stent, and a method of treatment using the stent are also provided.